



TSENG-8901 (09/892,014)

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(Currently Amended) 1. A micro-stamp array supported on a substrate comprising:  
an array of micro-stamp sticks composed of a cured silicon rubber substantially of a same stick length extending vertically from a surface of said substrate.

(Currently Amended) 2. The micro-stamp array of claim 1 wherein:  
each of said micro-stamp sticks further comprising a micro-channel for holding a liquid sample of predefined volume provided for maintaining an air-liquid equilibrium specifically for said liquid sample held therein.

(Currently added) 3. The micro-stamp array of claim 1 wherein:  
said array of micro-stamp sticks composed of said cured silicon rubber having substantially a cylindrical shape of at least two different diameters.

(Currently added) 4. The micro-stamp array of claim 1 wherein:  
said array of micro-stamp sticks composed of said cured silicon rubber having at least two different sizes of cross sectional areas.

(Currently added) 5. The micro-stamp array of claim 1 wherein:  
said array of micro-stamp sticks composed of said cured silicon rubber having said substantially same stick length approximately equal to a thickness of a photoresist layer.

(Currently added) 6. The micro-stamp array of claim 1 wherein:  
said array of micro-stamp sticks composed of said cured silicon rubber with said substantially same length having a shape and size defined by a plurality of openings in a photoresist layer.

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(Currently added) 7. The micro-stamp array of claim 2 wherein:

said substrate further having a plurality of micro-stamp tapered channels wherein each of said micro-stamp channels is in fluid communication with one said micro-channel in each of said micro-stamp sticks.

(Currently added) 8. The micro-stamp array of claim 7 wherein:

each of said plurality of micro-stamp tapered channels further having a guiding tube wall for defining a channel entrance.

(Currently added) 9. The micro-stamp array of claim 8 wherein:

said guiding tube wall further comprising a patterned plating layer for defining said channel entrance.

(Currently added) 10. The micro-stamp array of claim 7 further comprising:

a refilling means for refilling each of said plurality of micro-stamp tapered channels wherein said refilling means further comprising a refilling reservoir and a plurality of refilling micro-channels for refilling each of said plurality of micro-stamp tapered channels from said refilling reservoir.

(Currently added) 11. A method for manufacturing micro-stamp array comprising:

depositing and filling a plurality of openings in a photoresist layer with a liquid silicon rubber and then curing said silicon rubber.

(Currently added) 12. The method of claim 11 further comprising:

etching a via opening as a micro channel in each of said silicon rubber.

(Currently added) 13. The method of claim 11 further comprising:

bonding a supporting substrate onto said photoresist layer followed by removing said photoresist layer to form an array of micro-stamp sticks.

(Currently added) 14. The method of claim 11 wherein:

said step of filing said liquid silicon rubber into said openings in said photoresist layer further includes a step of filling said openings in said photoresist layer having substantially a cylindrical shape of at least two different diameters.

(Currently added) 15. The method of claim 11 wherein:

said step of filing said liquid silicon rubber into said openings in said photoresist layer further includes a step of filling said openings in said photoresist layer having at least two different sizes of cross sectional areas.

(Currently added) 16. The method of claim 11 wherein:

said step of filing said liquid silicon rubber into said openings in said photoresist layer further includes a step of forming said micro-stamp sticks having a substantially same stick length approximately equal to a thickness of said photoresist layer.

(Currently added) 17. The method of claim 13 further comprising:

forming a plurality of micro-stamp tapered channels in said supporting substrate wherein each of said micro-stamp channels is formed to be in fluid communication with one said micro-channel in each of said micro-stamp sticks.

(Currently added) 18. The method of claim 17 wherein:

said step of forming said micro-stamp tapered channel further including a step of etching each of said plurality of micro-stamp tapered channels through an area on said supporting substrate surrounded and defined by a guiding tube wall.

(Currently added) 19. The method of claim 18 further comprising:

forming and defining said guiding tube wall by patterning a plating layer on said supporting substrate.

(Currently added) 20. The micro-stamp array of claim 7 further comprising:

forming a refilling means comprising a refilling reservoir and a plurality of refilling micro-channels for refilling each of said plurality of micro-stamp tapered channels from said refilling reservoir.